

WHAT IS CLAIMED IS:

1. A terminal structure of a direct electric current superconducting cable comprising a core material, a plurality of superconducting layers provided over the core material, and outgoing conductors made of a normal conductive material, wherein the end portion of each of the superconducting layers is exposed in a step-by-step manner from an outer layer to an inner layer, and the outgoing conductors are individually connected with the exposed end portions of the respective superconducting layers.

2. A terminal structure of a direct electric current superconducting cable according to claim 1, wherein the outgoing conductors are extended from the exposed portions of the superconducting layers in a direction perpendicular to the axial direction of the superconducting cable.

3. A terminal structure of a direct electric current superconducting cable according to claim 1, wherein the outgoing conductors are extended from the exposed portions of the superconducting layers in a direction along the axial direction of the superconducting cable.

4. A terminal structure of a direct electric current superconducting cable according to claim 1, wherein an insulating fixing member for integrally supporting the core material and the outgoing conductors is further provided.

5. A terminal structure of a direct electric current superconducting cable according to claim 2, wherein an insulating fixing member for integrally supporting the core material and the outgoing conductors is further provided.

6. A terminal structure of a direct electric current superconducting cable

according to claim 3, wherein an insulating fixing member for integrally supporting the core material and the outgoing conductors is further provided.

7. A terminal structure of a direct electric current superconducting cable according to claim 1, wherein an electrical insulation layer, a return-current
5 conductor layer, and an insulating protective layer are provided in the enumerated order over the outermost superconducting layer.

8. A terminal structure of a direct electric current superconducting cable according to claim 2, wherein an electrical insulation layer, a return-current conductor layer, and an insulating protective layer are provided in the
10 enumerated order over the outermost superconducting layer.

9. A terminal structure of a direct electric current superconducting cable according to claim 3, wherein an electrical insulation layer, a return-current conductor layer, and an insulating protective layer are provided in the enumerated order over the outermost superconducting layer.

15 10. A terminal structure of a direct electric current superconducting cable according to claim 4, wherein an electrical insulation layer, a return-current conductor layer, and an insulating protective layer are provided in the enumerated order over the outermost superconducting layer.

11. A terminal structure of a direct electric current superconducting
20 cable according to claim 5, wherein an electrical insulation layer, a return-current conductor layer, and an insulating protective layer are provided in the enumerated order over the outermost superconducting layer.

12. A terminal structure of a direct electric current superconducting

cable according to claim 6, wherein an electrical insulation layer, a return-current conductor layer, and an insulating protective layer are provided in the enumerated order over the outermost superconducting layer.

13. A direct electric current superconducting cable line comprising power
5 supplies, loads and a superconducting cable for supplying electric power from the power supplies to the loads, wherein at least one end of the superconducting cable has a terminal structure according to claim 1, and each outgoing conductor is connected with one of the power supplies or one of the loads.

10 14. A direct electric current superconducting cable line comprising power supplies, loads and a superconducting cable for supplying electric power from the power supplies to the loads, wherein at least one end of the superconducting cable has a terminal structure according to claim 2, and each outgoing conductor is connected with one of the power supplies or one of the
15 loads.

15. A direct electric current superconducting cable line comprising power supplies, loads and a superconducting cable for supplying electric power from the power supplies to the loads, wherein at least one end of the superconducting cable has a terminal structure according to claim 3, and each
20 outgoing conductor is connected with one of the power supplies or one of the loads.

16. A direct electric current superconducting cable line comprising power supplies, loads and a superconducting cable for supplying electric power from

the power supplies to the loads, wherein at least one end of the superconducting cable has a terminal structure according to claim 4, and each outgoing conductor is connected with one of the power supplies or one of the loads.

5 17. A direct electric current superconducting cable line comprising power supplies, loads and a superconducting cable for supplying electric power from the power supplies to the loads, wherein at least one end of the superconducting cable has a terminal structure according to claim 5, and each outgoing conductor is connected with one of the power supplies or one of the
10 loads.

18. A direct electric current superconducting cable line comprising power supplies, loads and a superconducting cable for supplying electric power from the power supplies to the loads, wherein at least one end of the superconducting cable has a terminal structure according to claim 6, and each
15 outgoing conductor is connected with one of the power supplies or one of the loads.

19. A direct electric current superconducting cable line according to claim 13, further comprising a cutoff mechanism for cutting off a superconducting layer of the superconducting cable from the power supply and
20 the load when the superconducting layer is grounded.

20. A direct electric current superconducting cable line according to claim 13, wherein the superconducting cable has layer insulations for insulating between the superconducting layers, and the layer insulations have

dielectric strength sufficient for maintaining the voltage of the other layers when any one of the superconducting layers is grounded.

21. A direct electric current superconducting cable line according to claim 19, wherein the superconducting cable has layer insulations for
5 insulating between the superconducting layers, and the layer insulations have dielectric strength sufficient for maintaining the voltage of the other layers when any one of the superconducting layers is grounded.